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ORIGINAL PAPER

Ch-Ch-Ch-changes: How Action Phase Functional Leadership, Team Human Capital, and Interim vs. Permanent Leader Status Impact Post-transition Team Performance

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Abstract This study addresses the following: (1) does a team leader change along with the quality of the team's human capital affect post-change team performance?; (2) is functional leadership of the team's human capital a driver of post-change team performance?; and (3) should interim vs. permanent leaders manage the team's human capital differently? We analyzed archival data from Major League Baseball teams who had undergone an in-season manager change (N = 129). Team performance improved after a leader change, and the quality of the team's strategic and non-strategic core human capital were positively related to post-change performance. New leaders who engaged in more active functional leadership of the strategic core human capital enhanced the positive effects of human capital quality. Additionally, active functional leadership enhanced the positive effects of strategic core human capital for interim replacement leaders, but not for permanent replacement leaders. This study extends theory and practice on the importance of functional team leadership and human capital following a leader transition. As such, our results provide actionable knowledge for organizations and managers who are part of leadership transitions. This empirical study leverages a unique sample to provide insights into the implications of team leader transitions. The results of this study shed light on the impact that leader transitions which involve "interim" and "permanent" replacements may have on post-transition team performance and how these different types of leaders should leverage the inherent human capital that exists within the team.

Keywords Functional leadership · Human capital · Interim leaders · Leader change · Leader transitions · Team composition · Team performance

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Several organizational researchers have noted that leader tenure has declined (e.g., Ciampa and Watkins 1999; Manderscheid and Ardichvili 2008). One reason for these declining tenure levels may be the pace of leader transitions, which has increased steadily over the past few decades (Liberum Research 2006). As a result, leader transition and succession is becoming a topic of increasing theoretical and practical importance (e.g., Giambatista et al. 2005). For example, a developing stream of research has focused on how best to assimilate new leaders into their post-transition roles (e.g., Levin 2010; Manderscheid 2008). While we know more about leader transitions than we did 20 years ago when Kesner and Sebora (1994) published their extensive review of the succession literature, the understanding of the mechanisms that enable teams to perform successfully following a mid-stream leader change—that is, a change that occurs after a team has

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formed and begun working toward its collective objectives but before the overall performance cycle is complete—remains nascent. For example, prior studies indicate that team talent (Fizel and D'Itri 1997, 1999) and team leader qualifications (Cannella and Rowe 1995) are likely to be particularly important resources that enable teams to benefit from a change in leadership. However, team roles have differential importance to team success (Delery and Shaw 2001; Humphrey et al. 2009). Thus, it remains an unanswered question whether all team talent is equally important to a team's post-change success or whether team talent in some roles is fundamentally more important during team leader transition periods. Likewise, it remains unclear how the actions of the new leader and whether the new leader is interim or permanent impacts post-transition team performance.

Accordingly, in the current study, we aim to deepen our understanding of the implications of team leader transitions by identifying the team and leadership mechanisms that enable teams to succeed following such a transition. In doing so, we strive to make several contributions. First, we highlight the importance of the team's human capital resources in allowing the team to overcome the potentially disruptive effects of a leader change. Importantly, we examine these effects at a fine-grained level by leveraging the strategic core vs. non-strategic core distinction introduced by Humphrey et al. (2009) to advance the understanding of the unique importance of human capital resources in strategic and non-strategic core roles for post-change team performance. While we define this distinction more fully below, a team's strategic core includes those individuals who are most central to team workflow, perform essential tasks, and handle critical problems with the greatest frequency. In contrast, team members within non-strategic core roles play a more periphery or supportive role.

Second, we shed light on the role of leader actions as a driver of post-change team success. By studying the manner in which a new leader actually leads a team, we answer numerous calls for leader transition research to better understand the implications of leader behavior (e.g., Gabarro 1987; Manderscheid and Ardichvili 2008). Herein, we leverage functional leadership theory (e.g., McGrath 1962; Morgeson et al. 2010) in suggesting that new team leaders who actively manage their team's strategic core human capital resources during key action phases are better able to leverage the human capital resources in these key roles to address team problems and promote success than new team leaders who engage in a less active approach.

Our final contribution with this study is to consider the impact of an interim as compared to permanent replacement leader. With large organizations such as Citigroup, Bristol-Myers Squibb, Sharper Image, H&R Block, and Wendy's having used interim leaders in the recent past, the practice of naming an interim as opposed to a permanent leader has been highlighted in the popular press (see Rud 2004). Organizations are employing interim replacement leaders from the C-Suite to the project team level for reasons as diverse as providing immediate stability, initiating a longer-term search, or a desire to provide the replacement with a performance trial (e.g., Ballinger and Marcel 2010; Mooney et al. 2014). Yet, "what really happens during an interim succession episode…and what factors influence the succession outcome remain largely under-explored" (Chen et al. 2015, p. 3). By examining whether the status (i.e., interim vs. permanent) of the newly appointed leader is a boundary condition on the proposed interactive relationship between action phase functional leadership and the team's strategic core human capital begins to address this knowledge gap. More specifically, because naming an interim vs. a permanent replacement leader further enhances the uncertainty of a mid-stream change, and interim leaders may be viewed with lower status than their permanent counterparts, we expect that taking an active functional leadership stance during action phases is especially important for interim replacement leaders.

By making these contributions through our examination of the hypothesized model (see Fig. 1), our study not only extends theory and research on the importance of action phase functional team leadership and team human capital in post-change team success but also provides actionable knowledge for organizations and managers who are part of leader transitions. We examine our research questions using archival data from Major League Baseball (MLB) teams who have undergone a change in the team manager (i.e., the external, formal team leader) during the regular season. Using archival data from MLB organizations for research purposes offers numerous advantages. For instance, given the significant economic impact of MLB—an estimated $36 billion (USD)—industry (Ozanian 2015) and the passion many have for the sport, there is a wealth of publicly available objective statistical information regarding team members, team leaders (e.g., executives, managers, and coaches), and team performance. Likewise, team roles are clearly defined and differentiated within this context (Humphrey et al. 2009). Similarly, by focusing our

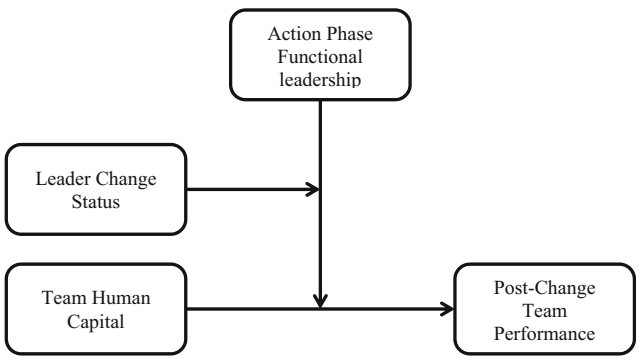

Fig. 1 Model of the hypothesized effects of action phase functional leadership, team human capital, and leader change status on post-change team performance

study exclusively on the effects of leader changes within MLB teams, we naturally control for industry effects. In sum, the strengths of the archival MLB data leveraged here have led many to advocate for its use, especially for topics such as leadership transitions (e.g., DiRenzo et al. 2016; Giambatista et al. 2005).

Theory and Hypothesis Development

Leader Transitions

As far back as the early 1960s, organizational researchers have been interested in understanding the impact of leader transitions on team performance in the sports industry (e.g., Cannella and Rowe 1995; Fabianic 1994; Giambatista 2004; Grusky 1960; Guest 1962). Initial work in this area found that in-season coaching changes resulted in short-run team performance improvements following the leader transition (Guest 1962). An underlying reason for these post-change improvements is that the new leader is not tied to, or committed to, decisions made by the prior leader and therefore is less likely to follow the status quo. Grusky (1963) quickly countered this "common sense" viewpoint with the "vicious circle" hypothesis arguing that coaching changes, which are a reaction to poor organizational performance, have disruptive effects on teams that make matters even worse, resulting in further performance decrements. Supporting the vicious circle perspective, Grusky (1963) found that MLB teams with more frequent managerial changes tend to have lower average standings than do those with fewer changes. From this perspective, in-season coaching changes are viewed as disruptive events that are apt to adversely impact team members' attitudes, emotions, and behaviors, as well as team performance (Ballinger and Schoorman 2007).

In turn, Gamson and Scotch (1964) challenged the conflicting views of the common sense and vicious circle perspectives, advancing the "ritual scapegoating" hypothesis, arguing that coaching changes have little impact (positive or negative) on team performance. Rather, they proposed that coaching changes tend to be initiated when teams experience temporary dips in performance that are ubiquitous and inevitable because of injuries or skill/ability decay in aging players. They further suggest that, because of the temporary nature of these performance dips, team performance is likely to improve whether the coach is changed or not. In essence, coaches whose tenure coincides with a natural performance dip tend to be the scapegoat and relieved of their duties to placate stakeholders (Gamson and Scotch 1964).

Findings from more recent studies of in-season coaching changes have found mixed support across the three perspectives. For example, Dohrn et al. (2015) found support for both the common sense and ritual scapegoating approaches within their study of National Collegiate Athletic Association (NCAA) football teams. Likewise, McTeer et al. (1995) found that within-season coaching changes across four professional sports leagues in North America—the National Basketball Association (NBA), National Football League (NFL), National Hockey League (NHL), and MLB—were associated with improved post-change performance improvements during that season, but not in the subsequent season. In contrast, when looking across seasons within a single league, both Giambatista (2004) and Rowe et al. (2005) found that in-season coaching changes were disruptive and detrimental to team performance among NBA and NHL teams, respectively. However, coaching changes may have long-term benefits for team performance when they have time to learn "the right things to do and the right way to do those things" (Giambatista et al. 2005, p. 974). As we noted earlier, our focus in the current study is understanding the near-term effects of team leader transitions. Given the inconsistencies in the findings across prior studies, rather than offer a formal hypothesis regarding the effects of team leadership change on post-change performance, we instead offer the following research question.

Research question 1 Are team leader transitions related to near-term post-change team performance after accounting for historical performance related effects (i.e., pre-change team performance, prior year team performance, and the leaders' prior success as a MLB team manager)?

The inconsistencies across studies regarding the near-term effects of team leader changes suggest that focusing solely on the act of a change in team leader (i.e., a coaching change) provides an incomplete understanding of the beneficial or disruptive influence of that change. For example, team talent (Fizel and D'Itri 1997, 1999) and team leader ability and experience (Cannella and Rowe 1995) have been found to be enabling conditions that shed light on when teams are most likely to benefit from a change in leadership. Accordingly, factors such as the quality of the team's human capital (DiRenzo et al. 2016) and the leadership provided by the newly appointed leader (Giambatista et al. 2005) play important roles in shaping the post-change success of the team. In the sections that follow, we examine how the team's human capital and the new leader's functional leadership during action phases are key drivers of post-change performance. We further consider the implications of the replacement status (interim vs. permanent) of the post-change leader.

Team Leader Change and Human Capital

The collection of unique talents and competencies provided by team members—i.e., the team's human capital—results in a pool of resources that are critical for building a competitive advantage (Barney 1991; Barney and Wright 1998; Nyberg

et al. 2014). More specifically, human capital is "a unit-level resource that is created from the emergence of individuals' knowledge, skills, abilities, and other characteristics [KSAOs]" (Ployhart and Moliterno 2011, p. 128). Some of these KSAOs are considered to be generic sources of human capital that have generalizable implications for success across situations while other KSAOs are context specific and critical to building a sustainable competitive advantage for the unit (Barney and Wright 1998; Ployhart and Moliterno 2011; Ployhart et al. 2011).

Importantly, a team's human capital originates within the characteristics of individual team members that provide them with the capacity to perform broad responsibilities and specific tasks proficiently and the aptitude to acquire new knowledge or develop new skills needed to enhance proficiency (Nyberg et al. 2014; Wright and Boswell 2002). Those characteristics that enable a team to succeed in achieving its collective goals become a property of the unit through emergence enabling processes whereby members form relationships, exchange information, and coordinate efforts commensurate with workflow structures, member interdependences, pacing requirements, and the dynamic nature of the task environment (Ployhart and Moliterno 2011).

Kozlowski and Klein (2000) distinguished between two forms of emergence through which individual-level properties manifest as unit-level properties. In compositional emergence, the unit-level property is presumed to be isomorphic to the individual-level characteristic. These individual building blocks combine in an additive fashion such that the unit mean or sum provides a meaningful indicator of the unit-level construct (Kozlowski and Klein 2000; Mathieu and Chen 2011). Much of the prior work on team cognitive ability and personality composition has viewed the process through which members' attributes give rise to team-level properties from a compositional emergence perspective (Bell 2007). Alternatively, compilational emergence occurs when the unit-level property diverges in form and function from the individual characteristics. The individual building blocks are distinct and combine in a complex, nonlinear manner such that careful consideration needs to be given to the operationalization of the unit-level property. Within some types of teams, members have an asymmetrical impact on team-level phenomena stemming from the centrality of their particular role(s) to the team's workflow. As a result, team composition characteristics may emerge in a number of complex combinations to reflect the differential importance or contribution of respective members' roles (Mathieu et al. 2008). The distinction between a team's strategic core and non-strategic core (Humphrey et al. 2009) provides one such example of how compilational emergence captures the distinctions among team roles (Mathieu and Chen 2011).

Teams are not only composed of a collection of individual members but also a collection of differentiated roles performed by those members (Hackman 1987; Mathieu et al. 2015; Mumford et al. 2008). Roles represent sets of interrelated behaviors targeted toward specified tasks, goals, or expectations (Katz and Kahn, 1978). Recognizing that some roles are more critical to the accomplishment of objectives than other roles (Delery and Shaw 2001; Emery and Trist 1969), Humphrey et al. (2009) proposed that those team roles more central to the success of the team form a team's strategic core while other roles—non-strategic core roles—play a more periphery or support role in driving team success. Specifically, a team's strategic core contains a role or roles that (a) are most central to the flow of work, (b) have the highest frequency performing the team's tasks, and (c) are responsible for directly addressing problems that are critical to team success (Humphrey et al. 2009). In contrast, the remaining roles on the team are less central to workflow, perform essential team tasks less frequently, and have less direct responsibility for addressing critical team problems. Because roles tend to comprise multiple team members, role composition provides an intermediary perspective on team composition (Humphrey et al. 2009), allowing for a nuanced understanding of the performance implications of a team's human capital resources.

Evidence of the differential importance of strategic core vs. non-strategic core roles has been found in several studies. Humphrey et al. (2009), for one, found that human capital in both strategic core and non-strategic core roles contributed to team success; however, as might be anticipated, the strategic core human capital had a stronger effect on team performance. Similarly, in a study of the impact of both team human capital and social capital in a 48-year study of NBA teams, Fonti and Maoret (2015) found that human capital among the team's core members (i.e., those members averaging 26 or more minutes of playing time per game) was more strongly linked to team performance than human capital among the team's periphery members (i.e., those members averaging less than 26 min of playing time per game). Further demonstrating the importance of strategic core roles, changes in the strategic core have been found to disrupt coordination efforts among team members, which in turn negatively impacted performance (Summers et al. 2012).

While the impact of strategic and non-strategic core human capital on overall team performance has been examined, these compositional factors have not been considered in prior examinations of team leader transition. That said, we expect that the team's human capital is critical to the team's success for several reasons. First, team human capital has been found to be an important driver of team performance in general (e.g., Bell 2007; Humphrey et al. 2009) and of relatively greater importance than other factors such as social capital (Fonti and Maoret, 2015). Second, mid-stream leader transitions are disruptive events (Giambatista et al. 2005; Rowe et al. 2005). Likewise, evidence from the team adaptation literature (see Maynard et al. 2015 for a review) indicates that a team's

human capital equips the team with the resources needed to adapt to disruptive events and perform successfully (e.g., LePine 2003, 2005; Resick et al. 2014). As such, the human capital that the new leader inherits provides the fundamental building blocks necessary for achieving the team's goals. New leaders that take over a team with higher quality human capital—capturing the proficiency and strength of the KSAOs among team members—have a sturdy set of building blocks to work with. However, we also expect that the quality of the team's strategic core human capital is particularly important following a team leader change. Individuals occupying strategic core roles will be expected to serve as the primary implementers of changes to workflow patterns or task strategies implemented by the new leader because they perform tasks that are most central to team success. These individuals are also the team members who are expected to confront critical team problems. As such, in a post-change period, they may provide an informal source of internal team leadership (Morgeson et al. 2010), enabling the team to adapt to the disruption and perform successfully. Therefore, we offer the following hypotheses:

H1a *The quality of the team's strategic core human capital is positively related to post-leader change team performance.*

H1b *The quality of the team's non-strategic core human capital is positively related to post-leader change team performance.*

H1c *The quality of the team's strategic core human capital is more strongly related to post-leader change team performance than non-strategic core human capital.*

Functional Leadership of Team Human Capital

In addition to the team's pool of strategic core and non-strategic core human capital resources, the leadership provided by the new leader should also have important implications for the team's post-transition success. In the most general sense, leadership "is a solution to the problem of collective effort—the problem of bringing people together and combining their efforts to promote success and survival" (Kaiser et al. 2008, p. 96). Thus, leadership plays an important role in facilitating team success (see Burke et al. 2006; Kozlowski and Ilgen 2006; Mathieu et al. 2008) by solving problems and allocating critical resources (Zaccaro et al. 2001), reducing barriers (Dirks and Ferrin 2002), facilitating information exchange (Randall et al. 2011), and providing a motivational force (Chen et al. 2011).

Functional leadership has been a particularly common lens through which organizational researchers have examined the role of team leadership (Burke et al. 2006; Morgeson et al. 2010). According to functional leadership theory, the role of leaders is "to do, or get done, whatever is not being adequately handled for group needs" (McGrath 1962, p. 5). More specifically, functional team leadership is thought to facilitate team success by intervening when necessary to satisfy the needs of the team (Morgeson et al. 2010). From this perspective, team leadership is viewed as serving a problem solving role such that leaders are responsible for identifying problems that may impede goal attainment, generating viable solutions, and implementing those solutions (Zaccaro et al. 2001). These leadership roles may be performed formally (e.g., designated team leader) or informally (e.g., emergent shared leadership among members) and can originate from within the team (e.g., project manager, team captain) or external to the team (e.g., project sponsors, team coach; Morgeson et al. 2010). In the current study, our focus is on the transition among formal team leaders whose role is external as opposed to internal to the team and the functional leadership provided by the new leader.

To advance the understanding of functional team leadership, Morgeson et al. (2010) provided a taxonomy of core leadership functions expected to satisfy team needs and promote team effectiveness. They further argued that the action and transition phases of team performance cycles present different demands, challenges, and opportunities requiring different functions from the leadership role. Therefore, they further classified the set of leadership functions according to their expected differential impact across action and transition phases. During action phases, which occur when the team is working directly toward accomplishing its collective goals and objectives (Marks et al. 2001), team leaders satisfy critical team needs by monitoring the team's performance, solving problems, acquiring and allocating resources, managing boundaries, challenging the team, and creating a supportive environment (Morgeson et al. 2010). During transition phases where the team is preparing to work on its next set of goals and objectives (Marks et al. 2001), leadership functions aimed at building and developing the team, defining team missions, establishing goals, expectations, roles, and structures, providing feedback, and engaging in sensemaking and sensegiving are thought to prepare the team to address the demands of the next action cycle and to interact with one another effectively (Morgeson et al. 2010).

In the current study, we focus specifically on action phase functional leadership for two reasons. First, this set of leadership functions focuses on diagnosing team problems while the team is directly working toward its goals, and in turn developing and implementing feasible solutions. Second, this set of functions directly addresses the effective utilization of resources, including the team's human capital, to overcome team challenges. Therefore, action phase leadership functions should serve as a proximal enabling mechanism that helps teams to perform successfully following a change in leader. Some support for these assertions can be found in Fizel and D'Itri's (1997, 1999) research on coaching replacements in

college basketball teams. Their work suggests that the relative efficiency of the replacement leader compared to the prior leader in using the team's talent to match the strength of their opponent (i.e., action phase leadership) had a positive influence on post-transition team performance.

In the current study, we shed light on the leadership functions that enable new leaders to leverage the team's pool of human capital resources to drive team success in the disruptive post-change period. During action phases, team leaders who are monitoring environmental changes and internal struggles should be able to identify critical challenges and bring resolution before these issues become problematic. The team's human capital provides a key set of resources for the leader to draw upon to address the team's immediate needs. However, some team roles are more central to team operations and success than others (Humphrey et al. 2009). The human capital resources in strategic core roles are likely to be a particularly beneficial set of resources for team leaders to draw upon to address team problems. Therefore, we expect action phase functional team leadership targeted at leveraging the team's strategic core human capital resources to have an enabling effect that strengthens the positive relationship between strategic core human capital and post-change performance. That is, teams led by replacement leaders who actively draw on and use their team's strategic core human capital resources are most likely to realize the benefits from those resources. Because non-strategic core roles are less central to team operations and effectiveness, we expect that functional team leadership targeted at leveraging non-strategic core resources is unlikely to have the same enabling effect and is a less efficient use of managerial and human capital resources. Therefore, we advance the following:

H2 *The positive relationship between the team's strategic core human capital and post-leader change team performance is moderated by the functional leadership of the team's strategic core during action phases such that the relationship is enhanced by leaders who actively engage in action phase functional leadership.*

Interim vs. "Permanent" Leader Transitions

Recently, a trend has become apparent where many organizations leverage an interim leader until a permanent replacement can be found (e.g., Brady 2006; Hymowitz 2006). In the wake of a mid-stream change in team leadership, the organization may name an interim or permanent replacement leader. That leader's status as an interim or permanent replacement may have ramifications for understanding the mechanisms that enable post-change performance.

Organizational researchers have begun to examine the phenomena of interim leadership in industries ranging from not-for-profit healthcare (e.g., Chapman et al. 1988; Ellis et al. 2005) to large publicly traded firms (e.g., Mooney et al. 2014). However, this research domain is rife with unanswered questions regarding the impact of utilizing interim versus permanent leaders. In particular, while work in this area has focused on the performance implications of selecting an interim as compared to a permanent replacement (e.g., Ballinger and Marcel 2010) as well as the factors that may lead to the decision to select an interim leader in the first place (e.g., Mooney et al. 2014), little is known about how an interim leader needs to manage once they are selected and whether interim vs. permanent leaders should enact leadership functions differently. We expect that interim vs. permanent status is a boundary condition on the proposed interactive relationship between action phase functional leadership and the team's strategic core human capital.

The disruptive nature of mid-stream leader changes may be further heightened when the status of the replacement leader is unclear, which can likely be the case if the new leader is classified as an interim leader. In turn, the performance implications of action phase functional leadership and strategic core human capital are likely to be of increased importance for interim as compared to permanent team leaders. For one, strong communication (which is a hallmark of functional leaders) is thought to be particularly important for interim leaders (e.g., Mooney et al. 2013). In addition, by actively monitoring team activities, diagnosing problems, and leveraging the team's strategic core human capital resources to satisfy needs or resolve problems, interim leaders may be able to minimize the disruption from the transition and help the team to maintain focus on its goals. Likewise, taking such an active leadership approach may enable the interim leader to build credibility and overcome any preconceived notions that he/she is just a placeholder and that the team will operate in the status quo until a permanent replacement is named (e.g., Ballinger and Marcel 2010). Similarly, prior research has demonstrated that in order for leaders to be successful, they need to have the trust of their team members (Dirks 2000). However, creating trusting relationships may be more challenging for interim leaders given their label and the preconceived notions that some team members may have regarding the likely tenure of an interim leader. As such, the interim leader may need to be more proactive and "hands on" with their leadership behaviors and thereby exhibit action phase functional leadership to a greater extent in order to build trusting relationships within the team. In comparison, given the enhanced position power (e.g., Chen et al. 2014) that a permanent leader possesses from the onset, they may not need to take as active a role to build credibility, trusting relationships, learn about the team's capabilities, and determine how to effectively leverage the available human capital resources to enable the team to succeed. Accordingly, we propose the following:

H3 *The interaction between action phase functional leadership of the team's strategic core human capital and the quality of the team's strategic core human capital in relation to team performance is moderated by the type of leader transition such that the positive effects are stronger for interim as opposed to permanent leaders.*

Method

Sample

We tested our hypotheses using archival data from MLB teams from 1974 to 2008. In 1974, an important change in MLB governing rules was enacted allowing players to enter free agency when their contracts expired. This rule change increased the complexity of team efforts to attract and retain valuable team talent. The use of 1974 as a starting point is also consistent with Humphrey et al.'s (2009) examination of the impact of team strategic core and non-strategic core human capital. Within this timeframe, we reviewed MLB archives and identified all changes in team managers that occurred during the regular season. A total of 207 changes were identified. We then identified all instances in which only one change occurred during the season to isolate the impact of a single change event and to exclude instances when temporary leader changes were enacted to address circumstances such as an illness or suspension. Finally, we retained only those cases in which the new leader managed 16 or more regular games (minimum of 10% of the season) to ensure that the new manager had a sufficient amount of time to have an impact on team performance. Based on these sampling conditions, the final sample included 129 instances of leadership change.

Measures

Human Capital To operationalize human capital, we used the pitcher wins and batter/fielder wins metrics obtained from the authors of *ESPN Baseball Encyclopedia* (Gillette and Palmer 2008) that are based on Thorn and Palmer's (1984) Total Player Rating metric (TPR). Prior research examining human capital in the context of professional baseball typically used earned run average (for pitchers) and batting average (for batters and fielders) as an index of a player's skills and abilities (e.g., Longley and Wong 2011; Zimbalist 1992). However, these measures do not capture the full range of human capital that a player uses to contribute to a team over the course of a season, nor do they consider differences in context such as variations in ballparks or season-specific situations (Hakes and Sauer 2006; Miceli and Huber 2009). The TPR comes from a class of metrics known as *Sabermetrics*, which provide a set of comprehensive indicators of player KSAOs (James and Henzler 2002). Specifically, the TPR metric is based on the assumption that a player's value is determined by the contribution of that player's KSAOs to the team relative to the contributions of peers. Sabermetrics such as TPR, which were made popular by Lewis' (2003) publication of *Moneyball*, are now commonly used among current MLB executives and baseball historians.

Because the required KSAOs are fundamentally different for pitcher and non-pitcher positions (Cotton et al. 2011; Howard and Miller 1993), MLB players were first categorized according to their primary roles (i.e., pitcher or batter/fielder). Gillette and Palmer (2008) then adapted the TPR formulas developed by Thorn and Palmer (1984) to calculate pitcher wins scores for all pitchers in MLB history and batter/fielder wins scores for all non-pitcher position players. The resulting score provides a comprehensive metric of a player's value relative to the average player. The pitcher wins metric is based on factors associated with pitching KSAOs. The batter/fielder wins metric is based on KSAOs across three categories: batting, fielding, and base stealing. For both pitchers and batter/fielders, a score of zero indicates average for that particular year. Appendix A outlines the formulas used to calculate pitcher wins and batter/fielder wins. These metrics are calculated at the conclusion of each season and are representative of a player's KSAOs for that specific season.

We aggregated these individual-level pitcher wins and batter/fielder wins scores to the team level to provide an index of the quality of the team's human capital. We conceptualize human capital quality as a configural team property (Klein and Kozlowski 2000) that captures the collective "can do" capabilities and "will do" motivational orientations of the team (Ployhart and Moliterno 2011). In team composition research, collective compositional characteristics are often most strongly related to performance outcomes when operationalized using the team-level mean, which provides a comprehensive representation of the distribution of composition characteristics among members (Bell 2007). Therefore, we used an additive composition model and calculated the team-level mean pitcher wins and the team-level mean batter/fielder wins scores. This approach is consistent with recent studies that have used unit-level mean KSAOs to operationalize unit-level human capital (e.g., Harris et al. 2012; Ployhart and Moliterno 2011).

Strategic Core and Non-strategic Core Human Capital As previously discussed, the strategic core comprises those roles/members of the team that (1) encounter more of the problems facing the team, (2) handle more of the work than other members, and (3) are most central to the workflow of the team. Following Humphrey et al. (2009), we also conclude that the pitching role is demonstrably aligned with each tenet of this definition and most appropriately categorized as the strategic core. This is because the pitching position initiates every

action within a game and is involved in every single play, whereas no other player is guaranteed to be involved.

That said, we depart slightly from Humphrey et al. (2009), in that we do not classify catchers as also belonging to the strategic core. Although catchers are also somewhat involved in each play by "calling" or signaling which type of pitch is to be performed, this function is primarily a communication mechanism so that the catcher will be prepared to receive the pitcher's desired type of pitch. As a manifestation of this communication process, catchers may play an advisory role in the decision-making process, but it is in fact the pitcher who has final discretion over which pitch will be thrown as he may often "shake-off" the catcher's signals when they do not match his strategic intentions. Moreover, and very importantly, it is also the pitcher who is entirely and idiosyncratically responsible for the execution of the conveyed strategy (i.e., the pitch). The success or failure of each pitch is solely dependent upon the pitcher's KSAOs to perform the pitch as planned. As such, pitchers not only dictate but also execute play-by-play strategy, thereby making the pitching role far more central to team functioning and success than any other role on the team.

In contrast, we categorize catchers and all other position players as non-strategic core human capital. None of the other eight position players engage in the sheer volume of activity as does the pitcher. Pitchers throw on average 146 pitches per game (http://www.baseball-reference.com/blog/archives/7533.html), whereas individual batters face merely 16.8 pitches/game (http://espn.go.com/mlb/stats/batting). Additionally, 27 outs complete a standard baseball game (not including extra innings); the pitching position accounts for about 29% of these outs via strikeout (7.72/game) in which no other fielder fundamentally contributes to the play (www.teamrankings.com/mlb). The remaining 19.28 outs per game are spread among all nine field players (including the pitcher), with the 50 most active fielders in MLB averaging only 2.41 outs per game (mlb.com/stats).

Moreover, while the pitcher proactively determines and executes the strategy of every play, all other player actions are reactionary. That is, the batter reacts to the pitch, not vice versa, and all fielding players then react to the actions of the batter. Indeed, managerial decisions regarding game day line-ups (who will play and in what order they will bat) are also reactionary and dependent upon the opponent's starting pitcher. Whether the pitcher is right- or left-handed and the types of pitches in his arsenal have implications on these decisions, further highlighting the preeminence of the pitching role relative to the other positions. Hence, although individual position players may have particular value to their team relative to their opponent's positional counterparts (e.g., Team A's second baseman may be more valuable than Team B's second baseman), no role has greater importance and value *within* the team than does the pitching role.

Functional Leadership In MLB, the team's manager is a formally designated external team leader. Team managers have the discretion to enact a wide range of leadership functions aimed at preparing the team to succeed at achieving its objectives (i.e., transition phase functional leadership) and interjecting into game situations to address the team's needs while the team is directly working toward its goals (i.e., action phase team leadership—Morgeson et al. 2010; Zaccaro et al. 2001). In the current study, our focus is the new leaders' enactment of leadership functions aimed at leveraging the team's available human capital during action phases. To operationalize functional leadership during action phases, we used data obtained from STATS LLC and calculated the ratio of the manager's total in-game line-up changes to the number of total games managed and did so separately for pitchers and batters/fielders. *Action phase functional leadership–strategic core* represents the ratio of the number of in-game pitching changes to the number of games managed. *Action phase functional leadership–non-strategic core* represents the ratio of the number of in-game batter and fielder changes to the number of games managed.

Leader Change Status We first identified all in-season managerial transitions by reviewing the information provided on Baseball Archive (http://www.seanlahman.com/baseball-archive/) and then classified each leader transition as interim (n = 54, coded as 1) or permanent (n = 75, coded as 2) based on the information provided in the Baseball Archive, the MLB team websites, as well as the detailed information provided in a book focused on all MLB coaches since 1871 (e.g., Brucato 2007). Permanent replacements were those managers who were named as the manager without the interim label at the time of their hiring. Interestingly, of the 54 interim managers, only 17 (or approximately 31%) were subsequently named as a full-time replacement following the transition year in which they served as an interim manager. This proportion of interim managers who ultimately became permanent leaders is similar to that noted by Chen and colleagues (in press) who found that 23% of interim CEOs within their sample of publicly traded US firms ultimately became the permanent CEO. In terms of the 75 permanent replacement managers, the majority (67 or approximately 89%) were retained as the manager at the start of the season following the leadership transition. Moreover, of those 67 "permanent" managers who led the team into the start of the season following the transition, 53 (approximately 71% of the original 75) remained the manager for the entire season. The 14 managers who were subsequently replaced during the following regular season managed 76 games on average (approximately half of the season).

Post-change Team Performance We calculated the team's win/loss percentage in the games played after the change in leader occurred. Data were obtained and verified through the

use of Baseball-Reference.com (http://www.baseball-reference.com) and Retrosheet.org (http://www.retrosheet.org).

Control Variables We controlled for several factors that could influence the proposed relationships. First, we controlled for whether the team was a member of the American (coded as 0) or National League (coded as 1) at the time of the leader change to account for any differences in rules or competition across the two leagues. Second, we controlled for the number of games managed by the new leader to account for any differences in the length of time the leader had to build a rapport with the team and determine how to best utilize the team's human capital. Third, to account for any historical performance-related effects that could influence post-change team performance or how the new leader enacted action phase functional leadership, we controlled for team performance prior to the change (pre-change team performance) and in the prior season (prior year team performance). Additionally, controlling for pre-change team performance enabled us to examine the effects of action phase functional leadership, human capital quality, and leader change status on the change in the team's performance following the transition. Fourth, we controlled for the leaders' prior success as an MLB team manager by entering the win/loss percentage if the leader served previously as a MLB manager. Finally, to account for any differences in familiarity and rapport with the team, we controlled for whether the leader was an external (coded as 0) or internal (coded as 1) hire (i.e., leader source) as prior work in this literature suggests this may impact post-change performance (e.g., Browning and McNamee 2012; Chapman et al. 1988; Lauterbach et al. 1999).

Analytic Approach

We first centered all variables and then created a series of two- and three-way interaction terms using the centered variables. To address research question 1 regarding the effects of a midstream leader change on post-change team performance, we conducted a repeated measures analysis of covariance with the six control variables included as covariates. To test hypotheses 1–3, we used hierarchical regression analyses entering the control variables in step 1, followed by the main effects of leader change status, strategic core human capital, non-strategic core human capital, action phase functional leadership of the strategic core human capital, and action phase functional leadership of the non-strategic core human capital in step 2. We then entered all two-way interaction terms in step 3, followed by the leader change status × human capital × action phase functional leadership interaction terms in step 4.

Prior studies have found that the statistical power to detect interactive effects in field studies tends to be reduced (Evans 1985; McClelland and Judd 1993). In such circumstances where statistical power is attenuated, strict efforts to minimize type I error rates may have the unintended consequence of increasing type II error rates (Aguinis et al. 2010). In fact, Aguinis et al. (2010) have proposed that organizational researchers carefully take into account concerns over both type I and type II errors in specifying statistical significance cut-off levels and do so on an a priori basis. Therefore, given our focus on testing interactive effects in hypotheses 2 and 3, we use $p < .10$ (two-tailed) as the criteria for determining statistical significance and support for our hypotheses.

Results

Table 1 summarizes the zero-order correlations among study variables. To investigate research question 1, which inquired whether a change in leader related to team performance, we conducted a repeated measures analysis of covariance. The results (see Fig. 2) indicated that teams performed significantly better following the leader change than before the change in leader ($M_{\text{pre-change}} = 0.429$ vs. $M_{\text{post-change}} = 0.478$; $F_{(1,128)} = 16.69$; $p < .01$; $\eta_p^2 = 0.12$). We also conducted a supplementary analysis to determine if the results differed for teams led by a new leader named as an interim as opposed to a permanent replacement. Again, as shown in Fig. 2, teams led by a permanent replacement leader performed significantly better post-change, as compared to pre-change, in leader ($M_{\text{pre-change}} = 0.430$ vs. $M_{\text{post-change}} = 0.486$; $F_{(1,74)} = 16.97$; $p < .01$; $\eta_p^2 = 0.19$). Teams led by an interim replacement leader also performed better post-change in leader; however, the effects were not as strong ($M_{\text{pre-change}} = 0.428$ vs. $M_{\text{post-change}} = 0.468$; $F_{(1,53)} = 3.36$; $p = .07$; $\eta_p^2 = 0.06$). It is interesting to note that, prior to the team leader change, the teams included in this sample were generally underperforming as they won fewer games than they lost ($M_{\text{winning percentage}} = 43\%$), which likely contributed to the resulting change in leadership. With that said, these findings suggest that simply replacing the team's formal leader is apt to have a positive effect on team performance, and this effect is even stronger when the new leader is named as the permanent as opposed to interim leader. However, given that these teams were still performing below the 0.500 break-even mark following the leadership transition, simply changing team leaders does not appear sufficient to turn a poorly performing team into a high-performing (or winning) team.

As shown in Table 2, in step 1 of the regression analyses, league membership, number of games managed, pre-change team performance, leader prior success, prior year team performance, and leader source explained a small amount of variance in post-change team performance ($R^2 = .03$, $F_{(6,122)} = 1.66$, ns). An examination of the regression coefficients indicated that none of the control variables were related to post-change team performance to a statistically significant

Table 1 Descriptive statistics and zero-order correlations among study variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. League	0.47	0.50											
2. Games managed	71.37	40.73	−0.08										
3. Pre-change team performance	0.43	0.09	0.03	−0.47**									
4. Leader prior success	0.25	0.27	0.06	0.11	0.10								
5. Prior year team performance	0.49	0.05	0.02	−0.20*	0.41**	0.06							
6. Leader source	0.60	0.49	−0.07	−0.02	−0.09	−0.30**	0.06						
7. Leader change status	1.58	0.50	−0.19*	0.31**	0.01	0.04	0.03	−0.20**					
8. Strategic core human capital	−0.04	0.36	−0.08	−0.15	0.43**	−0.00	0.24**	−0.16*	0.17*				
9. Non-core human capital	−0.11	0.27	0.04	−0.08	0.37**	0.21**	0.30**	−0.03	−0.07	0.08			
10. AP functional leadership–SC	145.96	97.14	0.33**	0.04	−0.46	−0.01	−0.12	0.06	−0.35**	−0.20*	0.01		
11. AP functional leadership–NC	159.52	96.71	0.62**	−0.30**	−0.10**	−0.05	−0.05	−0.09†	−0.14	−0.20	−0.04	0.16*	
12. Post-change team performance	0.48	0.12	−0.10	−0.11	0.23**	−0.02	0.19*	−0.02	0.07	0.35**	0.27**	−0.18*	−0.27**

Notes. $N = 129$. League = American (0) or National (1). Leader prior success = cumulative win/loss percentage of MLB teams previously managed. Leader change source = internal hire (1) or external hire (0). Leader change status = interim (1) or permanent (2). Strategic core human capital = pitcher wins metric. Non-core human capital = batter/fielder wins metric for non-pitchers. AP functional leadership–SC= action phase functional leadership of the strategic core (manager in-game pitching changes by games managed). AP functional leadership–NC= action phase functional leadership of the non-strategic core (manager in-game line-up changes by games managed)

*$p < .05$ (two-tailed); **$p < .01$ (two-tailed)

degree. In step 2, the addition of the main effects explained a substantial amount of incremental variance in post-change performance ($\Delta R^2 = .22$, $F_{(5,\ 117)} = 7.98$, $p < .01$). Interestingly, action phase functional leadership of the non-strategic core ($b = -0.06$, $p < .01$) was negatively related to post-change team performance while neither leader change status nor the action phase functional leadership of the team's strategic core were related to post-change team performance to a statistically significant degree. Therefore, the results suggest that action phase functional leadership alone as reflected in the new leaders' in-game changes does not appear to be beneficial for post-change team performance. Further, in the case of leadership targeted at the non-strategic core human capital, more active leadership (i.e., more changes) was negatively related to post-change team performance. However, as also demonstrated in step 2 of Table 2, the quality of both the strategic core human capital ($b = 0.11$, $p < .01$) and non-strategic core human capital ($b = 0.10$, $p < .05$) were positively related to post-change team performance. Accordingly, the quality of human capital within both the team's strategic core as well as in the non-strategic core is an important driver of post-change success. Therefore, our results are supportive of H1a and H1b.

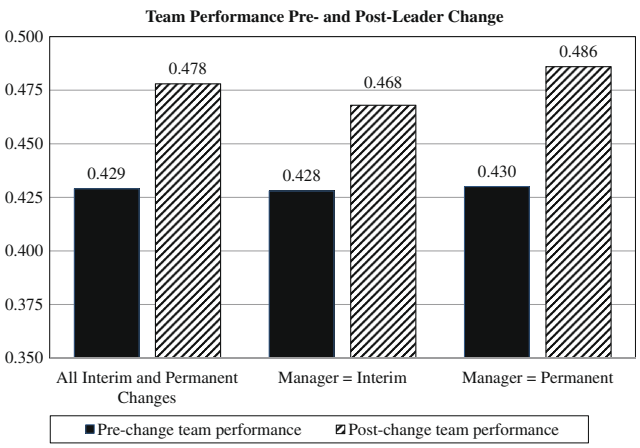

Fig. 2 Bar graph comparing pre-change team performance to post-change team performance. Note. Pre-change team performance = team winning percentage in games prior to the change in manager. Post-change team performance = team winning percentage in games following the change in team manager

Hypothesis H1c predicted that the team's strategic core human capital would be more strongly related to post-leader transition team performance than to non-strategic core human capital. An examination of the regression coefficients in Table 2 (step 2) suggests that the strategic core human capital did in fact have a stronger relationship with team performance ($b = 0.11$, $p < .01$) than did the non-strategic core human capital ($b = 0.10$, ns). However, this simple comparison is an inadequate indicator of relative importance because the predictors are correlated (Tonidandel et al. 2009). Therefore, to test Hypothesis 1c, we conducted a relative weight analysis

Table 2 Post-change team performance regressed on team human capital, action phase functional leadership, and leader change status

Variable	Step 1			Step 2			Step 3			Step 4		
	b	SE	*t*	b	SE	*t*	b	SE	*t*	b	SE	*t*
League	−0.03	0.02	−1.24	0.06*	0.03	2.13	0.07*	0.03	2.54	0.06*	0.03	2.56
Games managed	−0.01	0.00	−0.10	0.00	0.00	−1.49	0.00	0.00	−1.18	0.00	0.00	−0.45
Pre-change team performance	0.24	0.14	1.64	0.07	0.15	0.44	0.03	0.15	0.22	0.02	0.15	0.11
Leader prior success	−0.02	0.04	−0.48	−0.04	0.04	−1.00	−0.05	0.04	−1.28	−0.06	0.04	−1.60
Prior year team performance	0.27	0.22	1.27	−0.09	0.20	−0.44	−0.22	0.21	−1.05	−0.18	0.20	−.92
Leader source	−0.01	0.02	−0.34	0.00	0.02	0.06	−0.00	0.02	−0.07	−0.01	0.02	−.28
Leader change status				0.01	0.02	0.34	0.01	0.02	0.60	0.00	0.02	−.01
Strategic core human capital				0.11**	0.03	3.44	0.11**	0.03	3.49	0.07*	0.03	2.20
Non-core human capital				0.10*	0.04	2.57	0.12**	0.04	2.96	0.11**	0.04	2.97
AP functional leadership–SC				−0.02	0.02	−1.15	−0.03[a]	0.02	−1.88	−0.03	0.02	−1.48
AP functional leadership–NC				−0.06**	0.02	−4.15	−0.06**	0.02	−3.63	−0.06**	0.02	−3.38
Strategic core human capital × ap functional leadership–SC							0.10*	0.05	2.02	0.03	0.05	0.65
Strategic core human capital × ap functional leadership–NC							−0.02	0.03	−0.53	−0.04	0.03	−1.16
Strategic core human capital × non-core human capital							−0.12	0.12	−.97	−0.19[a]	0.12	−1.66
Non-core human capital × ap functional leadership–SC							0.09	0.07	1.34	0.10	0.07	1.53
Non-core human capital × ap functional leadership–NC							−0.02	0.04	−.55	−0.01	0.04	−0.93
Leader change status × strategic core human capital							0.02	0.06	.32	−0.01	0.06	−0.17
Leader change status × non-core human capital							0.22*	0.09	2.54	0.19*	0.08	2.38
Leader change status × ap functional leadership–SC							−0.07[a]	0.03	−1.96	−0.06[a]	0.03	−1.88
Leader change status × ap functional leadership–NC							0.01	0.02	.56	0.01	0.02	0.27
Leader change status × strategic core human capital × ap functional leadership–SC										−0.32**	0.09	−3.40
Leader change status × non-core human capital × ap functional leadership–NC										−0.07	0.08	−0.82
Adjusted R^2	0.03			0.25**			0.30**			0.36**		
F (*df*)	1.66 (6, 122)			4.80 (11, 117)			3.67 (20, 108)			4.26 (22, 106)		
Adjusted ΔR^2				0.22**			0.05[a]			0.06**		
Incremental *F* (*df*)				7.98 (5, 117)			1.90 (9, 108)			6.41 (2, 106)		

$N = 129$

b = unstandardized coefficient, *SE* = Standard error, *t* = *t* value, *AP* = action phase, *SC* = strategic core, *NC* = non-strategic core

*$p < .05$ (two-tailed); **$p < .01$ (two-tailed)

[a] <.10 (two-tailed)

(Johnson 2000) using RWA-Web (Tonidandel and LeBreton 2014). Relative weight analyses are helpful in drawing more accurate inferences regarding the proportional contribution of correlated predictor variables (Tonidandel and LeBreton 2014). Results from this analysis are summarized in Table 3. Confidence intervals for the individual relative weights (Johnson 2000) and all corresponding significance tests were based on bootstrapping with 10,000 replications, as suggested by Tonidandel et al. (2009). Bias corrected and accelerated confidence intervals were used in line with recommendations by Tonidandel et al. (2009). In all cases, 95% confidence intervals (CIs) were used (reflecting alpha level of 0.05).

The results indicate that a weighted linear combination of the human capital variables explained roughly 19% of the variance in post-change team performance. Furthermore, an examination of the relative weights revealed that the strategic core human capital explained a greater proportion of the variance as compared to the non-strategic core human capital. In fact, of the 19% variance explained by human capital, approximately 64% ($R^2 = .12$) was explained by the strategic core human capital, with the remaining 36% ($R^2 = .07$) being explained by non-strategic core human capital. Thus, the effect was roughly twice as strong for the strategic core human capital, supporting hypothesis 1c.

Table 3 Relative weight analysis

Variable	Relative weight	Lower CI	Upper CI	Relative weight rescaled
Strategic core human capital	0.12	0.003	0.245	63.61%
Non-strategic core human capital	0.07	−0.011	0.187	36.39%

Criterion = post-change team performance

$R^2 = .19$

Our second hypothesis sought to understand whether team performance was impacted by not just the quality of the team's human capital but also by how the new leader leveraged the team's strategic core (H2) human capital. As detailed in Table 2, the addition of the two-way interaction terms in step 3 explained a small but statistically significant amount of incremental variance (ΔR^2 = .05, $F_{(9,\ 108)}$ = 1.90, p < .10). Examination of the regression coefficients indicated that the strategic core human capital by action phase functional leadership of the strategic core interaction term was statistically significant (b = 0.10, p < .05). Therefore, the results indicate that H2 was supported. Again, while not hypothesized, it was interesting to note that the interaction term for non-strategic core human capital by action phase functional leadership of the non-strategic core was not statistically significant (b = −0.02, ns).

To further understand the nature of the interactive relationships, we followed procedures proposed by Dawson and Richter (2006) and Cohen et al. (2003) to graph the interaction effect at ±1 SD. As shown in Fig. 3, the relationship between strategic core human capital quality and post-change performance was stronger when new team leaders engaged in more (b = 0.21, p < .01) as opposed to less (b = 0.02, ns) action phase functional leadership aimed at leveraging the team's strategic core human capital. That is, replacement leaders who better utilized the team's pitching resources (by making more in-game pitching changes) encountered enhanced post-change team performance.

Next, we entered a block of three-way interactions in step 4 of the regression analyses (see Table 2). Again, the interactions explained a small but statistically significant amount of the remaining incremental variance (ΔR^2 = .06, $F_{(2,\ 106)}$ = 6.41, p < .01). The leader change status by strategic core human capital by action phase functional leadership of the strategic core interaction term was statistically significant (b = −0.32, p < .01), providing support for H3. Again, while not hypothesized, we did investigate whether the leader change status by non-strategic core human capital by action phase functional leadership of the non-strategic core interaction term was significant and it was not (b = −0.07, ns). However, it is interesting to note that the two-way interaction term for leader change status by non-strategic core human capital was statistically significant in steps 2 and 3, indicating that the quality of the team's non-strategic core human capital (i.e., non-pitchers) is more strongly related to post-change team performance for permanent (coded as 2) as opposed to interim (coded as 1) replacement leaders.

We used Dawson and Richter's (2006) procedure to graph the three-way interaction and test the joint effects of our three independent variables on post-change team performance. As shown in Fig. 4, the importance of actively engaging in leadership functions aimed at leveraging the team's strategic core human capital differed depending on whether the new leader was named as an interim vs. permanent replacement leader. For interim leaders, engaging in high levels of action phase functional leadership enhanced the interaction between strategic core human capital quality and the active leadership of such human capital (b = .43, p < .01), while engaging in lower levels of action phase functional leadership had a detrimental effect on the team's ability to take advantage of its strategic core human capital (b = −0.26, p < .05). For permanent replacement leaders, engaging in less action phase functional leadership enhanced the relationship between strategic core human capital quality and post-change performance (b = .35,

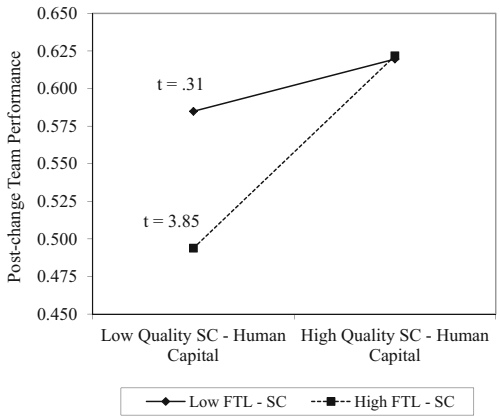

Fig. 3 Two-way interaction between strategic core human capital and action phase functional leadership of the strategic core in relation to post-change team performance. *Notes*. Low-quality SC–human capital = strategic core human capital (−1SD). High-quality SC–human capital = strategic core human capital (+1SD). Low FTL–SC = action phase functional leadership of the strategic core (−1SD). High FTL–SC = action phase functional leadership of the strategic core (+1SD)

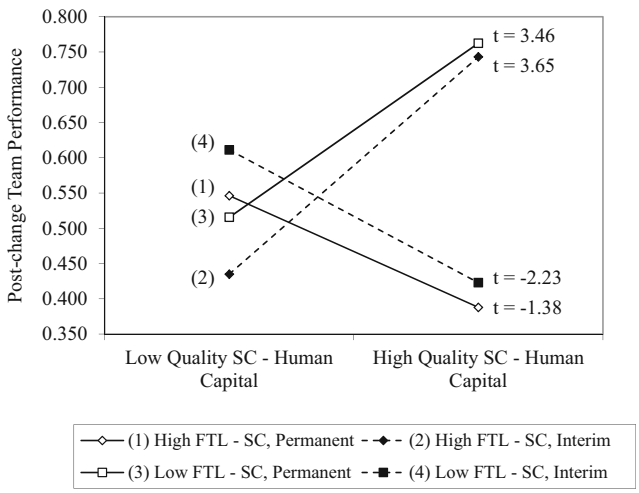

Fig. 4 Three-way interaction between strategic core human capital, action phase functional leadership of the strategic core, and leader change status in relation to post-change team performance. *Notes.* Low-quality Quality SC–human capital = strategic core human capital (−1SD). High-quality Quality SC–human capital = strategic core human capital (+1SD). Low FTL–SC = action phase functional leadership of the strategic core (−1SD). High FTL–SC = action phase functional leadership of the strategic core (+1SD)

$p < .01$), while engaging in high levels of action phase functional leadership detracted from the benefits of high-quality strategic core human capital ($b = -0.22$, ns), though not to a statistically significant degree. Collectively, these findings regarding the impact of leader change status were supportive of H3 given that the interaction between the action phase functional leadership of the team's strategic core human capital and the underlying quality of that human capital were enhanced for interim leaders.

Discussion

Theoretical Implications

Numerous studies have examined the inputs, processes, and emergent states through which teams can be designed and managed to garner the highest levels of performance (see Ilgen et al. 2005; Kozlowski and Ilgen 2006; Mathieu et al. 2008). However, the performance implications of team leader transitions and the levers through which replacement leaders can drive team performance improvements remain unclear. Accordingly, our study sheds light on the mechanisms that enable teams to perform more successfully following a leader transition. Specifically, our study is one of the first to leverage team adaptation research (e.g., Maynard et al. 2015) and consider how a team's human capital creates a capacity to overcome the disruptive challenges of a leader change and perform effectively. Leveraging the logic embedded within the strategic core theory introduced by Humphrey et al. (2009), our findings demonstrate that having higher quality human capital within both strategic and non-strategic core roles is essential for teams embarking on a leadership change but that, as would be expected, the strategic core has a greater impact.

Further, our study responds to numerous calls within the leadership change literature to examine the role that the actions and behaviors exhibited by the new leader play in the ultimate success of such transitions (e.g., Gabarro 1987; Manderscheid and Ardichvili 2008). Our measure of action phase functional leadership captures how the new leader intervenes to solve problems and provide resources to enable the team to achieve its goal of winning the game. Here, we found that action phase functional leadership targeted at the strategic core of the team enhanced the effects of this type of human capital quality on post-change performance. In contrast, supplemental analysis provided evidence that action phase functional leadership targeted at non-strategic core positions did not enhance the effects of non-strategic core human capital quality on performance. This finding may be a reflection of the non-strategic core roles (in this case all batters and fielders) functioning in a reactive capacity to the strategic core roles (in this case pitchers). As such, our findings contribute to the functional leadership and strategic core theories by demonstrating that, in teams with pooled forms of interdependence such as baseball teams, leaders may most efficiently utilize the team's human capital resources by targeting action phase functional leadership behaviors at members in strategic core roles instead of all roles. These findings also align with and extend prior work on empowerment (e.g., Maynard et al. 2012; Srivastava et al. 2006) by suggesting that an empowering leadership stance is not universally successful. In particular, we find that a less active and more empowering form of functional leadership during action phases may be beneficial in some, but not all, circumstances. Rather, leaders should consider how central a team member's role is to the core operations of the team and base their leadership actions accordingly.

Finally, given that in practice many replacement leaders are brought in on an interim basis, we sought to understand the impact that having an interim as compared to a permanent replacement leader had with the abovementioned relationships. Our findings contribute to the interim leadership literature by demonstrating that new leaders may benefit from enacting leadership functions differently during action phases depending on their classification as an interim or permanent replacement leader. Specifically, we provide evidence that actively engaging in functional leadership during action phases is most beneficial for interim leaders who are managing a team with higher levels of strategic core human capital and less effective if the overall quality of strategic core human capital is low. In contrast, engaging in a less active and more empowering form of action phase functional leadership with the team's strategic core is most beneficial for permanent replacement leaders. As such, our study extends both the leadership transition and functional leadership literatures by suggesting that replacement leaders should enact action phase functional leadership aimed at utilizing the team's strategic core human capital resources differently depending on whether they have been designed as an interim or permanent replacement.

Practical Implications

The findings from the current study also have several practical implications for teams and organizations considering a transition in leaders. In particular, our results support the assertion that a leader change is likely to be a disruptive event. However, rather than being a disruption that leads to chaos and confusion, leader transitions appear to be beneficial for the team as it can move the team away from routines and rituals which may be limiting a team's success. As such, organizations appear justified in considering making a change in leadership in hopes of improving the team's overall performance. That said, our results also suggest that making a leadership change in and of itself does not represent a "cure all" for teams that may be underperforming.

In fact, our results also highlight that organizations need to consider the collective capabilities of team members when contemplating such a change. In particular, the results indicate that teams with higher quality human capital levels are better able to garner the performance improvements sought when making a leader change. Beyond this overall result, our study findings go a bit deeper and suggest that organizations need to consider the quality of both their strategic and non-strategic core human capital as both types appear salient in shaping post-leader change team performance. While both types of human capital appear salient, our study suggests that organizations should give more weight to the quality of their team's strategic core human capital quality as it has a more salient impact on team performance after a leader transition as compared to non-strategic core human capital. Accordingly, before contemplating a leadership transition, organizations need to truly examine the membership of the team and decide whether the team possesses the necessary human capital levels to withstand such a disruption.

Likewise, our results provide insights for individuals who find themselves taking over the reins of a team following a leadership change. Our results would suggest that actively managing the team's strategic and non-strategic core human capital during team action phases without considering the underlying quality of the team's human capital could prove detrimental in terms of the team's post-change team performance. Instead, our results indicate that new leaders who fully engage in functional leadership during action phases are able to effectively leverage the team's available human capital in critical strategic core roles. However, again, it is important that new leaders pay attention to the type of human capital as this result only appears to be the case with the team's strategic core human capital.

Interestingly, the interaction between the quality of a team's strategic core human capital and how this subset of the team's human capital is managed by the team leader during action phases differs depending on whether the new leader is classified as an interim or permanent replacement. Specifically, for interim replacement leaders, it is especially important to understand the strengths and limitations of the team's strategic core human capital resources and to actively leverage those resources when necessary. Such actions are apt to have an enabling effect that strengthens the effects of strategic core talent. Conversely, permanent leaders may benefit from a less hands-on approach, particularly when the team has strong talent in its strategic core roles. In fact, it appears that permanent replacement leaders who make fewer adjustments to strategic core personnel during action phases enhanced the effects of the team's strategic core human capital on team performance. For this type of replacement leader, taking a more active role appeared to have a constraining effect on team members in strategic core roles, thereby dampening the relationship between the quality of this type of human capital and post-change performance.

Strengths, Limitations, and Future Research Directions

From a design perspective, our study has several strengths. In particular, while controlling for industry effects by conducting our study exclusively within MLB teams, we sampled every instance of a leadership change for the period of 1974 through 2008. Additionally, we controlled for a variety of variables that have been demonstrated to impact the efficacy of leader transitions. By including these variables in our analysis, we were able to isolate the unique variance explained by our variables of interest, namely, strategic and non-strategic core human capital, the action phase functional leadership of such human capital, and the impact of interim and permanent leadership changes. Additionally, by examining leadership transitions within the data-rich context of MLB, we were able to isolate the performance changes that occurred within the team immediately following the leadership transition which would be more difficult, if not impossible, to do within an organizational setting.

These strengths aside, there are some inherent limitations that need to be discussed. In particular, the generalizability of our results to other contexts and industries is certainly a point that future research should explore. However, as noted by other researchers within the area of leader transitions, the sports arena provides a rich environment for studying the phenomena of leader changes (e.g., Giambatista et al. 2005). Additionally, based on our review of the literature, this is one of the first studies to attempt to not just examine the performance implications of leader transitions but also to attempt to ascertain the leadership behaviors that may be a contributing factor in causing such performance enhancements or detriments. That said, in our study, the focus was on the leadership approach of the replacement leader. Future research may want to also consider the leadership approach of the predecessor leader as it may also be relevant to consider the differences in such approaches; it is possible that the variance or uniqueness of the leadership approach exhibited by the replacement also contributes to changes in team performance following a leadership transition.

Similarly, in the current study, we did not examine the effects of functional leadership behaviors exhibited by replacement leader during transition phases (i.e., between game leadership). Transition phase functions such as adjusting team structures, establishing game plans, providing additional training resources, and helping the team to make sense of past performance for both strategic core and non-strategic core roles may be particularly important leadership functions that directly enable teams to perform well or operate in conjunction with action phase functions. In addition, it is interesting to note that action phase functional leadership of both the strategic core and non-strategic core roles was negatively correlated with team winning percentage (see Table 1). This finding may indicate that the performance effects of external team leaders may be best understood through their interactions with other

mechanisms such as the team's human capital. Alternatively, the negative relationship observed in this study may be a function of our use of a proxy measure of functional leadership that focused exclusively on the number of in-game line-up changes. In games where their team is winning, there are fewer problem opportunities for the leader to intervene; therefore, fewer line-up changes are needed. Conversely, in games where their team is behind, leaders may have enacted more changes as a problem-solving mechanism. As such, our measure of action phase functional leadership is somewhat narrow relative to the types of actions that functional leaders may undertake. To more fully understand the importance of functional team leadership for replacement leaders, future research should examine the impact of a broader range of leadership functions and behaviors enacted across both action and transition phases.

Likewise, our study design enabled us to pinpoint the performance changes happening following a leadership transition and to ascertain the implications that action phase functional leadership behaviors exhibited by the formal leader within each game had in contributing to post-change team performance. However, we did not examine the trends of such performance as well as the trends within such leadership behaviors. Future research in this area may be able to extend the work that we have conducted here by utilizing techniques such as latent growth modeling (e.g., Naidoo et al. 2011) to examine the relationships elicited here, but do so by more robustly considering temporal effects. Likewise, while we focused exclusively on the leadership behaviors of the formal leader, future research may want to examine what internal, informal leaders do in helping the team adjust to disruptions such as leader transitions.

In the current study, we extended the leader transition literature by examining how the new leader leveraged the human capital that existed within the team. However, we utilized the strategic and non-strategic core categories to provide a fine-grained understanding of how the leader manages these different categories of human capital. Humphrey et al. (2009) introduced this thinking about different types of human capital, and our sample, like theirs, was drawn from MLB. However, we measured the strategic core human capital in a slightly different way than they did. Specifically, rather than including both the catcher and pitcher positions as the strategic core, we focused exclusively on the pitcher portion of the strategic core. While we are confident in our assertion that this role is a portion of the team's strategic core, it does raise an interesting question that future work on organizational teams could pursue—namely, how does one distinguish which roles are in the strategic vs. non-strategic core?

For instance, if one were to observe a surgical team, it could be debatable which roles make up the strategic core. For instance, one observer may state that the surgeon and the surgical technician comprise the surgical core as these individuals are "more central to the workflow of the team" (Humphrey et al. 2009, pg. 50). However, others might suggest that it is the surgeon and the anesthesiologist as these individuals "encounter more of the problems that need to be overcome in the team" (Humphrey et al. 2009, pg. 50). This example is intended to demonstrate that the strategic core may, in practice, be an unclear distinction. That said, it also reinforces the fact that in the case of the surgical team, the surgeon is likely included in the strategic core of all observers as we would argue is the case with pitchers in the MLB sample examined here. However, it begs the question for future research to explore regarding the operationalization of strategic and non-strategic core human capital.

Likewise, this point also surfaces another interesting question—namely, are all individuals within the non-strategic core of equal importance? Leveraging the baseball team example from the current study, if the third baseman and the leftfielder both are viewed as non-strategic core roles (as was done here), are they then of equal importance to the team or can the individuals included within the non-strategic core be stratified in terms of their relative importance to the team's functioning? As such, we contend that this is a relevant question for future researchers to explore in terms of whether different gradients of strategic importance exist within a team and whether these different levels of strategic importance can help to better understand the relative importance of each member within a team.

Finally, while leveraging the MLB context allowed us to examine relationships within the leader transition literature, which have not been empirically examined to date, future research may want to make use of other research techniques in building upon our work. Namely, it may be beneficial for future leader change researchers to leverage a more qualitative approach and, by doing so, gain a more in-depth understanding of what goes on within an organization that is undergoing a leadership transition. Such work might be particularly insightful given that the preponderance of work within the area of leadership transitions has leveraged archival data to attempt to glean what is truly happening within organizations and teams undergoing a transition in leaders. As such, research approaches such as diary capturing and journaling of leaders and team members during a leadership change may provide new insights into the challenges that teams and leaders face and the team and leadership mechanisms that enable teams to overcome these challenges and perform at optimal levels.

Conclusion

In conclusion, this study extends the leader transition literature in several important ways. Specifically, our study suggests that teams need to have sufficiently strong human capital, particularly within strategic core roles to effectively adjust to a leader transition. Likewise, our study provides practical implications for leaders taking over a team during a mid-stream transition. Specifically, the benefits of taking an active, functional leadership approach during action phases appear

especially important for interim leaders. In contrast, permanent replacement leaders are likely to benefit by taking a less active approach to enacting functional leadership during action phases and encourage self-management to empower the team to achieve its potential. Our study sheds initial light on the roles of human capital, action phase functional leadership, and leader change status in enabling teams to perform successfully following a change in team leader. We hope that our research calls to attention the importance of empirically studying the factors that contribute to successful and unsuccessful team leader changes and by doing so can move this line of research out of the on-deck circle and up to the plate!

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Appendix

Strategic core human capital—pitcher wins:

- Pitcher wins = baseline pitching score × pitching factor score.
- Baseline Pitching Score = (PPF x LERA × IP/9 − ER + URF)/PPF
- Pitching Factor Score = 9(W + L. + SV/XSV)/IP

The *pitching factor score* accounts for the differing roles between starting and relief pitchers. Starting pitchers play less frequently but pitch for more innings per outing than do a typical relief pitcher. For instance, starting pitchers usually play once every five games and pitch on average seven innings in that game, while relief pitchers commonly pitch only one inning (or less) but play in nearly every game.

- PPF: pitcher's park factor.

This statistic accounts for variation in park dimensions/locations/etc. It is calculated by

- Park factor = ((homers + homeRA)/(homeG))/((roadRS + roadRA)/(roadG))
- homeRS: runs scored at home
- homeRA: runs allowed at home
- homeG: home games
- roadRS: runs scored on the road
- roadRA: runs allowed on the road
- roadG: road games
- IP: total innings pitched.

These are divided by nine in the derivation because there are nine innings in a game, thereby enabling an approximation of how many total games a pitcher pitched over the course of the entire season.

- ER: total earned runs given up by the pitcher.
- LERA: league earned run average (across American or National League).

This is the league average for the number of earned runs allowed per nine innings pitched. It is calculated by

- LERA = (LER × 9)/LIP
- LER = total league earned runs
- LIP = total league inning pitched
- URF: unearned run factor that accounts for the unearned runs a pitcher is accountable for. It is calculated by
- URF = .5(ER − R × TER/TR)
- R: total no. of runs attributed to a pitcher (i.e., earned + unearned runs)
- TR: team-level statistic for R above
- TER: team-level statistic for ER above
- W: wins
- L: losses
- SV: saves
- XSV: this statistic is used to properly credit relief pitchers for the extra or lesser value of their innings pitched. It is calculated by
- XSV = 10(LS/LW)
- LS: total league saves
- LW: total league wins

Non-strategic core human capital—batter/fielder wins metric:

- Batter/fielder wins = bat value + base stealing value + fielding value
- Batting = adjusted bat score/RPW.
- RPW (runs per win) is the average number of runs needed to gain an addition win in the standings. Historically, RPW is about 10. RPW = 10 times the square root of runs per inning (by both teams). In a typical context, each team scores 4.5 runs per game, the runs per inning for both teams is 1, and thus RPW = 10.
- Adjusted bat score = baseline bat score − (BPF − 1) × RPA × PA/BPF
- RPA: runs per plate appearance in the league
- PA: plate appearances
- BPF: batter's park factor (calculated same as PPF above)

- Baseline bat score = .33(BB + HBP) + .47(H) + .38(D) + .55(T) + .93(HR) − ABF(AB − H)
- BB: walks
- HBP: hit by pitch
- H: hits
- D: Doubles
- T: triples
- HR: home runs
- AB: at bats
- ABF (league batting factor) makes the value of an average batter equal to 0 and is computed with the following formula:
- [.33(BB + HBP) + .47(H) + .38(D) + .55(T) + .93(HR)]/(AB − LGF × H).
- LGF: the league factor, adjusts for the quality of league play, and equals 1 except for the Federal League (1914–1915) for which it equals 0.9.
- Base stealing value = 0.22(SB) − (−.35)(CS)/RPW
- SB: stolen bases
- CS: caught stealing (caught by opponent)
- Fielding value = PFR/(TPO − TSO) − LFR/(LPO − LSO) × player innings
- TPO: team putouts
- TSO: team strikeouts (striking out the opponent)
- LPO: league putouts
- LSO: league strikeouts
- PFR: player fielding rate
- LFR: league fielding rate

*Fielding rates vary by position and are calculated as follows:

First base: 0.2(2A − E)
Catcher: 0.2[PO − SO + 0.4(A − CS) − E + DP + PB/2]
Rest of infield: 0.2(PO + 2A − E + DP)
Outfield: 0.2(PO + 4A − E + DP)
A: assists
E: assists
CS: caught stealing (catching the opponent)
DP: double plays
PB: passed balls

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